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(L4 (L) PREP/RL)

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L6 0 L5 AND TRANSITION TEMPERATTURE

=> s 15 and transition temperature
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36903 TRANSITION TEMPERATURE
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=> d 1-47 bib abs

L7 ANSWER 1 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2007:195482 CAPLUS
DN 146:422699
TI Thermally reversible cross-linked polyamides with high toughness and self-repairing ability from maleimide- and furan-functionalized aromatic polyamides
AU Liu, Ying-Ling; Chen, Yi-Wen
CS R&D Center for Membrane Technology and Department of Chemical Engineering, Chung Yuan Christian University, Taoyuan, 32023, Taiwan
SO Macromolecular Chemistry and Physics (2007), 208(2), 224-232

CODEN: MCHPES; ISSN: 1022-1352

PB Wiley-VCH Verlag GmbH & Co. KGaA

DT Journal

LA English

AB Polyamides having various amts. of maleimide (PA-MI) and furan (PA-F) pendent groups, resp., as well as their cross-linked polymers (PA-MI/PA-F) were prepared. PA-MI/PA-F crosslinked polymers showed thermally reversible crosslinking behavior via Diels-Alder (DA) and retro-DA reactions. Crosslinked PA-MI/PA-F films exhibited enhanced toughness and mech. properties compared to PA-MI and PA-F precursors. Moreover, PA-MI/PA-F films also showed thermal self-repairing behavior, which was observed in the micrographs and instron tests.

RE.CNT 37 THERE ARE 37 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 2 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2007:156809 CAPLUS

DN 146:402402

TI Novel aromatic poly(amide-hydrazide)s based on the bipyridine. Part I: Synthesis, characterization and thermal stability

AU Abdolmaleki, Amir

CS College of Chemistry, Isfahan University of Technology, Esfahan, 84156, Iran

SO Polymer Degradation and Stability (2007), 92(2), 292-298

CODEN: PDSTDW; ISSN: 0141-3910

PB Elsevier Ltd.

DT Journal

LA English

AB A series of new poly(amide-hydrazide)s were obtained by the direct polycondensation of 5-amino-5'-carbohydrazido-2,2'-bipyridine with com. available diacids by means of tri-Ph phosphite and pyridine in the N-methyl-2-pyrrolidone (NMP) solns. containing dissolved LiCl. The resulting hydrazide containing polymers exhibited inherent viscosities in the 0.42-0.64 dL/g range. All copolymers were soluble in polar solvents such as NMP and DMSO. Most of the amorphous hydrazide copolymers formed flexible and tough films by solvent casting. The poly(amide-hydrazide)s had glass-transition temps. (Tg) between 178° and 206°. All hydrazide copolymers could be thermally converted into the corresponding poly(amide-oxadiazole) approx. in the region of 300°-400°, as evidenced by the DSC thermograms. The oxadiazole polymers and copolymers showed a dramatically decreased solubility and higher Tg when compared to their resp. hydrazide prepolymers. They exhibited Tgs of 197°-248° and were stable up to 450° in air or nitrogen.

RE.CNT 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 3 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2007:40560 CAPLUS

DN 146:274716

TI Synthesis and properties of new polyamides based on a hydroxyethyl cinnamide extended from 3,5-diaminobenzoic acid

AU Onciu, Marioara

CS "Petru Poni" Institute of Macromolecular Chemistry, Iasi, 700487, Rom.

SO Journal of Applied Polymer Science (2007), 103(3), 2013-2020

CODEN: JAPNAB; ISSN: 0021-8995

PB John Wiley & Sons, Inc.

DT Journal

LA English

AB A series of new aromatic polyamides containing cinnamide pendent units were prepared from 2'-(cinnamide)ethyl-3,5-diaminobenzoate and various aromatic dicarboxylic acids by the direct polycondensation reaction, with tri-Ph phosphite and pyridine as condensing agents. The polyamides were characterized by 1H NMR, IR, and UV spectroscopy, and gel permeation

chromatog. Their thermal stability was studied by thermogravimetric anal. in air, and differential scanning calorimetry. These polymers were readily soluble in polar aprotic solvents and can be cast from their solns. in flexible and tough films. Glass transition temps. (Tgs) of these polyamides were observed in the range of 225-245°. Their inherent viscosities varied from 0.77 to 1.12 dL/g that corresponded to weight-average

and

number-average mol. wts. of 39,000-72,700 and 18,800-29,000, resp. These polymers can be photochem. crosslinked. The photochem. aspects were revealed by UV-vis and IR analyses onto their films.

RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 4 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2006:777776 CAPLUS

DN 145:357224

TI Preparation and properties of polyhedral oligosilsequioxane tethered aromatic polyamide nanocomposites through michael addition between maleimide-containing polyamides and an amino-functionalized polyhedral oligosilsesquioxane

AU Liu, Ying-Ling; Lee, Hui-Chen

CS Department of Chemical Engineering and R&D Center for Membrane Technology, Chung Yuan Christian University, Taoyuan, 32023, Taiwan

SO Journal of Polymer Science, Part A: Polymer Chemistry (2006), 44(15), 4632-4643

CODEN: JPACEC; ISSN: 0887-624X

PB John Wiley & Sons, Inc.

DT Journal

LA English

AB Polyhedral oligosilsesquioxane (POSS)-tethered aromatic polyamide nanocomposites with various POSS fractions were prepared through Michael addition between maleimide-containing polyamides and amino-functionalized POSS. The chemical structures of the polyamide-POSS nanocomposites were characterized with Fourier-transform IR and ¹H NMR spectroscopy. The polyamide-POSS nanocomposites exhibited good homogeneity in SEM and transmission electron microscopy observations. POSS modification increased the storage modulus and Young's modulus of the polyamides, slightly decreased their glass transition temps. from 312° to 305°, and significantly lowered their dielec. consts. from 4.45 to 3.35.

RE.CNT 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 5 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2006:777767 CAPLUS

DN 145:377619

TI Novel aromatic polyamides and polyimides functionalized with 4-tert-butyltriphenylamine groups

AU Hsiao, Sheng-Huei; Chang, Yu-Min; Chen, Hwei-Wen; Liou, Guey-Sheng

CS Department of Chemical Engineering, Tatung University, Taipei, 104, Taiwan

SO Journal of Polymer Science, Part A: Polymer Chemistry (2006), 44(15), 4579-4592

CODEN: JPACEC; ISSN: 0887-624X

PB John Wiley & Sons, Inc.

DT Journal

LA English

AB A new triphenylamine-containing diamine monomer, 4,4'-diamino-4''-tert-butyltriphenylamine, was successfully synthesized by the cesium fluoride-mediated N,N-diarylation of 4-tert-butylaniline with 4-fluoronitrobenzene, followed by the reduction of the nitro group. The obtained diamine monomer was reacted with various aromatic dicarboxylic acids and tetracarboxylic dianhydrides to produce two series of novel triphenylamine-based polyamides and polyimides with pendent tert-Bu substituents. Most of the polymers were readily soluble in polar organic

solvents, such as N-methyl-2-pyrrolidone and N,N-dimethylacetamide, and could be solution cast into tough and flexible polymer films. These polymers showed high glass transition temps. between 282° and 320°, and they were fairly stable up to a temperature above 450° (for polyamides) or 500° (for polyimides). These polymers exhibited UV absorption maxima around 308 to 361 nm. The photoluminescence spectra of the polyamides in DMAc exhibited a peak emission wavelength in the blue at 421-433 nm. Cyclic voltammograms of polyamides and polyimides showed an oxidation wave at 1.0-1.1 V vs. Ag/AgCl in an acetonitrile solution. All the polyamides and polyimides exhibited excellent reversibility of electrochromic characteristics by continuous several cyclic scans between 0.0 and 1.1-1.3 V, with a color change from the original pale yellowish neutral form to the green or blue oxidized forms.

RE.CNT 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 6 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2006:647131 CAPLUS

DN 145:249604

TI Synthesis and photoluminescent and electrochromic properties of aromatic poly(amine amide)s bearing pendent N-carbazolylphenyl moieties

AU Liou, Guey-Sheng; Chen, Hwei-Wen; Yen, Hung-Ju

CS Functional Polymeric Materials Research Laboratory, Department of Applied Chemistry, National Chi Nan University, Nantou Hsien, 54561, Taiwan

SO Journal of Polymer Science, Part A: Polymer Chemistry (2006), 44(13), 4108-4121

CODEN: JPACEC; ISSN: 0887-624X

PB John Wiley & Sons, Inc.

DT Journal

LA English

AB A series of novel poly(amine amide)s (IIa-III) with pendent N-carbazolylphenyl units having inherent viscosities of 0.25-1.06 dL/g were prepared via direct phosphorylation polycondensation from various dicarboxylic acids and a carbazole-based aromatic diamine. Except for poly(amine amide) IIc, derived from trans-1,4-cyclohexanedicarboxylic acid, all the other amorphous poly(amine amide)s were readily soluble in many polar solvents, such as N,N-dimethylacetamide and N-methyl-2-pyrrolidone (NMP), and could be cast into transparent and flexible films. The aromatic poly(amine amide)s had useful levels of thermal stability associated with relatively high glass-transition temps. (268-331 °C), 10% weight loss temps. in excess of 540 °C, and char yields at 800 °C in nitrogen higher than 60%. These polymers exhibited maximum UV-visible absorption at 293-361 nm in NMP solns. Their photoluminescence in NMP solns. exhibited fluorescence emission maxima around 362 and 448-499 nm for aromatic-aliphatic poly(amine amide)s IIa-IIc and aromatic poly(amine amide)s

IIId-III, resp. The fluorescence quantum yield in NMP solns. ranged from 0.34% for IIj to 4.44% for IIa. The hole-transporting and electrochromic properties were examined with electrochem. and spectroelectrochem. methods. Cyclic voltammograms of the poly(amine amide) films cast onto an indium tin oxide coated glass substrate exhibited reversible oxidation at 0.81 V and irreversible oxidation redox couples at 1.20 V vs. Ag/AgCl in acetonitrile solns., and they revealed excellent stability of the electrochromic characteristics, with a color change from yellow to green at applied potentials ranging from 0.00 to 1.05 V.

RE.CNT 67 THERE ARE 67 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 7 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2006:552254 CAPLUS

DN 145:211416

TI Synthesis and properties of some phosphorus-containing polyesters

AU Vlad-Bubulac, Tachita; Hamciuc, Corneliu; Petreus, Oana

CS Institute of Macromolecular Chemistry, Iasi, 700487, Rom.

SO High Performance Polymers (2006), 18(3), 255-264
CODEN: HPPOEX; ISSN: 0954-0083
PB Sage Publications
DT Journal
LA English
AB Phosphorus-containing polyesters were prepared by polycondensation of 2-(6-oxido-6H-dibenz <c,e> <1,2>oxaphosphorin-6-yl)-1,4-benzenediol with different aromatic dicarboxylic acids using a SOCl₂/pyridine condensing agent. The polymers were soluble in polar organic solvents such as N-methylpyrrolidone, N,N-dimethylformamide, THF and chloroform. They showed high thermal stability having a decomposition temperature above 360° and char yield at 700° in the range of 19-32%. The glass transition temperature was in the range of 180°-194°. Solns. of the polymers in N,N-dimethylformamide showed fluorescence having maximum emission wavelength around 362 nm. One of the polymers exhibited thermotropic liquid crystalline behavior.

RE.CNT 19 THERE ARE 19 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 8 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2005:1305316 CAPLUS
DN 145:249590
TI Aromatic polyamides containing chalconyl substituted m-phenylenediamine segments
AU Rusu, Elena; Onciu, Marioara
CS "Petru Poni" Inst. of Macromolecular Chem., Iasi, 700487, Rom.
SO Polimery (Warsaw, Poland) (2005), 50(11/12), 797-804
CODEN: POLIA4; ISSN: 0032-2725
PB Instytut Chemii Przemyslowej
DT Journal
LA English
AB 4'-(β-Hydroxyethoxy)chalconyl-3,5-diaminobenzoate and three kinds of aromatic dicarboxylic acids were used as monomers in a direct polycondensation reaction for synthesis of some polyamides containing chalconyl units in pendant groups. The presence of these units in the structure of polyamides renders them photoreactive and this property was monitored by UV and IR spectroscopy. The polyamides show good thermal stability, glass transition temperature (T_g) values around 230°C and inherent viscosity in the range of 0.67-0.79 dLg-1. The synthesis of the photosensitive polymers using the above polyamides via phosphorylation condensation reaction was also reported.

RE.CNT 35 THERE ARE 35 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 9 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2005:1201581 CAPLUS
DN 145:28307
TI Synthesis, characterization and properties of poly(aryl amides) containing methoxy substituted phthalazinone moiety
AU Wang, Pei; Liu, Jian Dong; Jian, Xi Gao
CS Department of Polymer Science & Materials, Dalian University of Technology, Dalian, 116012, Peop. Rep. China
SO Chinese Chemical Letters (2005), 16(10), 1324-1326
CODEN: CCLEE7; ISSN: 1001-8417
PB Chinese Chemical Society
DT Journal
LA English
OS CASREACT 145:28307
AB A novel aromatic diamine, 1,2-dihydro-2-(4-aminophenyl)-4-[3-methoxy-4-(4-aminophenoxy)]-2,3-phthalazin-1-one (OO-DA) containing an aza heterocyclic structure was synthesized from the bisphenol-like monomer in two steps and used for preparing new aromatic polyamides with a high inherent viscosity of 0.89-1.03 dL·g⁻¹. The structures of the diamine and polymers obtained were confirmed by MS, FT-IR, WAXD and ¹H-NMR. The synthesized

polymers exhibited high glass transition temps. in the range of 281-307° and good solubility in polar solvents.

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 10 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2005:543396 CAPLUS

DN 143:153819

TI Preparation and characterization of low degree of branching aromatic polyamides from a new BB'B triamine monomer and dicarboxylic acids

AU Wang, Kun-Li; Kakimoto, Masa-Aki; Jikei, Mitsutoshi

CS Department of Organic and Polymeric Materials, Tokyo Institute of Technology, O-okayama, Meguro-ku, Tokyo, 152-8550, Japan

SO High Performance Polymers (2005), 17(2), 225-238

CODEN: HPPOEX; ISSN: 0954-0083

PB Sage Publications

DT Journal

LA English

AB Aromatic polyamides with multi amino end groups were prepared from a novel triamine (II) (BB'B') and dicarboxylic acids (A2) in the presence of (2,3-dihydro-2-thioxo-3-benzoxazolyl)phosphonic acid di-Ph ester (DBOP) as a condensing agent. The corresponding polyamides were obtained in quantitative yields with inherent viscosities of 0.40-0.42 dL g⁻¹. The structure of the polyamides with low degree of branching was confirmed by NMR and by IR spectroscopy. The amino terminal groups of the polymers were modified by reacting with acetyl chloride, benzoyl chloride and phthalic anhydride to give terminally modified polyamides. Although the degree of branching was as small as 0.05, their solubility in amide solvents was clearly improved. The end group modification of the polyamides greatly affected the thermal properties. Strong but brittle films were prepared by casting from N,N-dimethylformamide (DMF) solution. The mech. properties were comparable with those of corresponding linear polymers.

RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 11 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2005:401051 CAPLUS

DN 143:78587

TI Novel family of triphenylamine-containing, hole-transporting, amorphous, aromatic polyamides with stable electrochromic properties

AU Su, Tzy-Hsiang; Hsiao, Sheng-Huei; Liou, Guey-Sheng

CS Department of Applied Chemistry, National Chi Nan University, Nantou Hsien, 545, Taiwan

SO Journal of Polymer Science, Part A: Polymer Chemistry (2005), 43(10), 2085-2098

CODEN: JPACEC; ISSN: 0887-624X

PB John Wiley & Sons, Inc.

DT Journal

LA English

AB We report the preparation and characterization of a series of novel electrochromic, aromatic poly(amine amide)s with pendent triphenylamine units. The synthesis proceeded via direct phosphorylation polycondensation between a novel diamine, N,N-bis(4-aminophenyl)-N',N'-diphenyl-1,4-phenylenediamine, and various aromatic dicarboxylic acids. All the poly(amine amide)s were amorphous and readily soluble in many common organic

solvents and could be solution-cast into transparent, tough, and flexible films with good mech. properties. They exhibited good thermal stability and 10% weight-loss temps. above 540°. Their glass-transition temps. were 263-290°. These polymers in N-methyl-2-pyrrolidinone solns. exhibited strong UV-visible absorption peaks at 307-358 nm and photoluminescence peaks around 532-590 nm in the green region. The hole-transporting and electrochromic properties were studied with electrochem. and spectroelectrochem. methods. Cyclic voltammograms of

poly(amine amide) films prepared by the casting of polymer solns. onto an indium tin oxide coated glass substrate exhibited two reversible oxidation redox couples at 0.65 and 1.03 V vs. Ag/AgCl in an acetonitrile solution. All the poly(amine amide)s showed excellent stability with respect to their electrochromic characteristics; the color of the films changed from pale yellow to green and then blue at 0.85 and 1.25 V, resp.

RE.CNT 41 THERE ARE 41 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 12 OF 47 CAPLUS. COPYRIGHT 2007 ACS on STN
AN 2005:122105 CAPLUS
DN 142:355650
TI Synthesis and properties of novel aromatic poly(ester-amide)s derived from 1,5-bis(3-aminobenzoyloxy)naphthalene and aromatic dicarboxylic acids
AU Hsiao, Sheng-Huei; Leu, Wen-Tsuen
CS Department of Chemical Engineering, Tatung University, Taipei, 104, Taiwan
SO Polymer International (2005), 54(2), 392-400
CODEN: PLYIEI; ISSN: 0959-8103
PB John Wiley & Sons Ltd.
DT Journal
LA English
AB A new naphthalene-ring-containing bis(ester-amine), 1,5-bis(3-aminobenzoyloxy)naphthalene, was prepared from the condensation of 1,5-dihydroxynaphthalene with 3-nitrobenzoyl chloride followed by catalytic hydrogenation. A series of novel naphthalene-containing poly(ester-amide)s was synthesized by direct phosphorylation polyamidation from this bis(ester-amine) with various aromatic dicarboxylic acids. The polymers were produced in high yields and had moderate inherent viscosities of 0.47-0.81 dL g⁻¹. The poly(ester-amide) derived from terephthalic acid was semicryst. and showed less solubility. Other polymers derived from less rigid and sym. diacids were amorphous and readily soluble in most polar organic solvents and could be solution-cast into transparent, flexible and tough films with good mech. properties. The amorphous poly(ester-amide)s displayed well-defined glass transition temps. of between 179 and 225°C from differential scanning calorimetry and softening temps. of between 178 and 211°C from thermomech. anal. These poly(ester-amide)s did not show significant decomposition below 400°C in nitrogen or air.

RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 13 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2004:850697 CAPLUS
DN 142:38613
TI Soluble aromatic polyamides bearing asymmetrical diaryl ether groups
AU Hsiao, Sheng-Huei; Lin, Ke-Han
CS Department of Chemical Engineering, Tatung University, Taichung, 104, Taiwan
SO Polymer (2004), 45(23), 7877-7885
CODEN: POLMAG; ISSN: 0032-3861
PB Elsevier Ltd.
DT Journal
LA English
AB A series of novel aromatic polyamides containing asym. diaryl ether structure was synthesized by the phosphorylation polyamidation of 5-(4-aminophenoxy)-1-naphthylamine with various dicarboxylic acids. The polymers were obtained in high yields and moderately high inherent viscosities (0.74-1.36 dL/g). Except for one example, all the polyamides were amorphous and readily soluble in many organic solvents and could afford flexible and tough films via solution casting. The cast films exhibited good mech. properties with tensile strengths of 90-128 MPa, elongation at break of 9-64%, and initial moduli of 2.08-3.08 GPa. Glass-transition temps. ranged from 222 to 288°C by DSC. Thermal stabilities by TGA for the polymer series ranged from 462

to 517°C in air at the point of 10% weight loss. These polyamides displayed a lower crystallinity and better solubility and film-forming capability than the corresponding analogs derived from sym.

1,5-diaminonaphthalene and 1,5-bis(4-aminophenoxy)naphthalene.

RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 14 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2004:815400 CAPLUS
DN 142:23592
TI Synthesis and properties of novel aromatic poly(ester amide)s derived from 1,5-bis(4-aminobenzoyloxy)naphthalene and aromatic dicarboxylic acids
AU Hsiao, Sheng-Huei; Leu, Wen-Tsuen
CS Department of Chemical Engineering, Tatung University, Taipei, 104, Taiwan
SO European Polymer Journal (2004), 40(11), 2471-2480
CODEN: EUPJAG; ISSN: 0014-3057

PB Elsevier B.V.

DT Journal

LA English

AB A new naphthalene ring-containing bis(ester amine), 1,5-bis(4-aminobenzoyloxy)naphthalene, was synthesized from the condensation of 1,5-dihydroxynaphthalene with 4-nitrobenzoyl chloride followed by catalytic hydrogenation. A series of naphthalene-containing poly(ester amide)s having inherent viscosities of 0.34-0.82 dL/g were prepared by the direct phosphorylation polyamidation from the bis(ester amine) with various aromatic dicarboxylic acids. The poly(ester amide)s derived from terephthalic acid, 4,4'-biphenyldicarboxylic acid, 2,6-naphthalenedicarboxylic acid, and 4,4'-oxydibenzoic acid were semicryst. and showed less solubility. The other polymers were amorphous and readily soluble

in polar organic solvents and gave flexible and tough films via solution casting. Except for four examples, the poly(ester amide)s displayed discernible glass transitions between 190° and 227° by differential scanning calorimetry. These poly(ester amide)s did not show significant decomposition below 400° in nitrogen or air.

RE.CNT 20 THERE ARE 20 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 15 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2004:538889 CAPLUS
DN 141:243913

TI New soluble aromatic polyamides containing ether linkages and laterally attached p-terphenyls

AU Hsiao, Sheng-Huei; Chang, Yu-Hui

CS Department of Chemical Engineering, Tatung University, Taichung, 104, Taiwan

SO European Polymer Journal (2004), 40(8), 1749-1757

CODEN: EUPJAG; ISSN: 0014-3057

PB Elsevier Science B.V.

DT Journal

LA English

AB Two series of new polyamides containing flexible ether linkages and laterally attached side rods (3a-i and 4a-i) were synthesized from 2',5'-bis(4-aminophenoxy)-[1,1';4',1'']terphenyl (1a) and 2',5'-bis(4-amino-2-trifluoromethylphenoxy)-[1,1';4',1'']terphenyl (1b), resp., with various aromatic dicarboxylic acids by the direct phosphorylation polycondensation. The polymers were produced with high yields and moderate to high inherent viscosities (0.41-0.97 dL/g) that corresponded to weight-average mol. wts. (by size exclusion chromatog.) of 47,000-65,000. Except for some polyamides that derived from rigid diacids, the obtained polyamides were readily soluble in aprotic polar solvents, such as N-methyl-2-pyrrolidone (NMP) and N,N-dimethylacetamide (DMAC), and could afford flexible and tough films via solvent casting. The polymer films cast from DMAC solns. possessed tensile strengths of 85-106 MPa and

initial moduli of 1.82-2.96 GPa. These polyamides showed glass-transition temps. (T_g) in the range of 206-263 °C (by DSC) and softening temps. (T_s) in the range of 211-253 °C (by TMA). Decomposition temps. (T_d) for 10% weight loss all occurred above 400 °C (by TGA) in both nitrogen and air atmospheres. The polyamides 4a-i derived from trifluoromethyl-substituted diamine 1b generally showed a higher solubility, T_g and T_s but lower thermal stability as compared to the analogous polyamides 3a-i based on diamine 1a.

RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE.FORMAT

L7 ANSWER 16 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2004:535746 CAPLUS

DN 141:225924

TI Fluorinated polyamides and poly(amide imide)s based on 1,4-bis(4-amino-2-trifluoromethylphenoxy)benzene, aromatic dicarboxylic acids, and various monotrimellitides and bistrimellitides: Syntheses and properties

AU Yang, Chin-Ping; Chen, Ya-Ping; Woo, E. M.

CS Department of Chemical Engineering, Tatung University, Taipei, 104, Taiwan

SO Journal of Polymer Science, Part A: Polymer Chemistry (2004), 42(13), 3116-3129

CODEN: JPACEC; ISSN: 0887-624X

PB John Wiley & Sons, Inc.

DT Journal

LA English

AB A CF₃-containing diamine, 1,4-bis(4-amino-2-trifluoromethylphenoxy)benzene (I), was prepared from hydroquinone and 2-chloro-5-nitrobenzotrifluoride. Imide-containing diacids were prepared through the condensation reaction of amino acids, aromatic diamines, and trimellitic anhydride. Then, a series of soluble fluorinated polyamides and poly(amide imide)s were synthesized from I with various aromatic diacids and imide-containing diacids via direct polycondensation with tri-Ph phosphate and pyridine. The polyamides and poly(amide imide)s had inherent viscosities of 1.00-1.70 and 0.79-1.34 dL/g, resp. All the synthesized polymers showed excellent solubility in amide-type solvents such as N-methyl-2-pyrrolidinone, N,N-dimethylacetamide, and N-dimethylformamide and afforded transparent and tough films via solvent casting. Polymer films of the fluorinated polyamides and poly(amide imide)s had tensile strengths of 91-113 MPa, elongations to break of 8-40%, and initial moduli of 2.1-2.8 GPa. The glass transition temps. of the polyamides and poly(amide imide)s were 254-276° and 255-292°, resp., and the imide-containing poly(amide imide)s had better thermal stability than the polyamides. The polyamides showed higher transparency and were much lighter in color than the poly(amide imide)s, and their cutoff wave nos. were below 400 nm. In comparison with isomeric IXc-h, poly(amide imide)s VIIIC-h exhibited less coloring and showed lower yellowness indexes.

RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE.FORMAT

L7 ANSWER 17 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2004:376653 CAPLUS

DN 141:89462

TI A novel class of organosoluble and light-colored fluorinated polyamides derived from 2,2'-bis(4-amino-2-trifluoromethylphenoxy)biphenyl or 2,2'-bis(4-amino-2-trifluoromethylphenoxy)-1,1'-binaphthyl

AU Hsiao, Sheng-Huei; Yang, Chin-Ping; Tsai, Che-Yu; Liou, Guey-Sheng

CS Department of Chemical Engineering, Tatung University, Taichung, Taipei, 104, Taiwan

SO European Polymer Journal (2004), 40(6), 1081-1094

CODEN: EUPJAG; ISSN: 0014-3057

PB Elsevier Science B.V.

DT Journal

LA English

AB Two series of novel fluorinated aromatic polyamides were prepared from 2,2'-bis(4-amino-2-trifluoromethylphenoxy)biphenyl (2) and 2,2'-bis(4-amino-2-trifluoromethylphenoxy)-1,1'-binaphthyl (4) with various aromatic dicarboxylic acids using the phosphorylation polycondensation technique. The polyamides had inherent viscosities ranging from 0.43 to 0.62 dL/g and 0.36 to 0.74 dL/g, resp. All the fluorinated polyamides were soluble in many polar organic solvents such as N,N-dimethylacetamide (DMAC), N-methyl-2-pyrrolidinone, and afforded transparent, light-colored, and flexible films upon casting from DMAC solvent. These polyamides showed glass-transition temps. in the ranges of 190-240° (for the 6 series from diamine 2) and 247-255° (for the 7 series from diamine 4) by differential scanning calorimetry, softening temps. in the ranges of 196-230° (6 series) and 241-291° (7 series) by thermomech. anal., and decomposition temps. for 10% weight loss above 420° in both nitrogen and air atmospheres.

RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 18 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2004:368504 CAPLUS

DN 141:71952

TI Preparation and properties of new polyimides and polyamides based on 1,4-bis(4-amino-2-trifluoromethylphenoxy)naphthalene

AU Hsiao, Sheng-Huei; Yang, Chin-Ping; Huang, Sheng-Ching

CS Department of Chemical Engineering, Tatung University, Taipei, Taiwan

SO Journal of Polymer Science, Part A: Polymer Chemistry (2004), 42(10), 2377-2394

CODEN: JPACEC; ISSN: 0887-624X

PB John Wiley & Sons, Inc.

DT Journal

LA English

AB A novel, trifluoromethyl-substituted, bis(ether amine) monomer, 1,4-bis(4-amino-2-trifluoromethylphenoxy)naphthalene, was synthesized through the nucleophilic displacement of 2-chloro-5-nitrobenzotrifluoride with 1,4-dihydroxynaphthalene in the presence of potassium carbonate in DMSO, followed by catalytic reduction with hydrazine and Pd/C in ethanol. A series of new fluorine-containing polyimides with inherent viscosities of 0.57-0.91 dL/g were prepared by reacting the diamine with six com. available aromatic dianhydrides via a conventional, two-step thermal or chemical imidization method. Most of the resulting polyimides were soluble in strong polar solvents such as N-methylpyrrolidone and N,N-dimethylacetamide (DMAC). All the polyimides afforded transparent, flexible, and strong films with good tensile properties. These polyimides exhibited glass-transition temps. (Tg's) (by DSC) and softening temps. (by thermomech. anal.) in the ranges of 252-315 and 254-301 °C, resp. Decomposition temps. for 5% weight loss all occurred above 500 °C in both air and nitrogen atmospheres. The dielec. consts. of these polyimides ranged from 3.03 to 3.71 at 1 MHz. In addition, a series of new, fluorinated polyamides with inherent viscosities of 0.32-0.62 dL/g were prepared by the direct polycondensation reaction the diamine with various aromatic dicarboxylic acids by means of tri-Ph phosphite and pyridine. All the polyamides were soluble in polar solvents such as DMAC and could be solution-cast into tough and flexible films. These polyamides had Tg's between 228 and 256° and 10% weight-loss temps. above 400° in nitrogen or air.

RE.CNT 42 THERE ARE 42 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 19 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2003:712084 CAPLUS

DN 140:357756

TI Polyamides with cinnamoyloxyethyl groups in side chains

AU Onciu, Marioara; Rusu, Elena

CS "Petru Poni" Institute of Macromolecular Chemistry, Iasi, 6600, Rom.

SO Materiale Plastice (Bucharest, Romania) (2003), 40(2), 103-106

CODEN: MPLAAM; ISSN: 0025-5289

PB SYSCOM 18 SRL

DT Journal

LA English

AB Some photosensitive structurally different polyamides were obtained using as starting monomers various dicarboxylic acids and 2'-(cinnamoyloxy)ethyl-3,5-diaminobenzoate. Their synthesis is based on the Yamazaki-Higashi procedure. The characterization of the prepared polyamides was accomplished by spectroscopic and thermal measurements.

RE.CNT 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 20 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2003:683386 CAPLUS

DN 140:5380

TI Synthesis and properties of fluorinated polyamides based on 2,7-bis(4-amino-2-trifluoromethylphenoxy)naphthalene

AU Hsiao, Sheng-Huei; Yang, Chin-Ping; Chung, Cheng-Lin

CS Department of Chemical Engineering, Tatung University, Taipei, 104, Taiwan

SO Polymer Journal (Tokyo, Japan) (2003), 35(8), 677-682

CODEN: POLJB8; ISSN: 0032-3896

PB Society of Polymer Science, Japan

DT Journal

LA English

AB Ether-bridged aromatic polyamides were synthesized by the direct polycondensation of the diamines 2,7-bis(4-aminophenoxy)naphthalene and 2,7-bis(4-amino-2-trifluoromethylphenoxy)naphthalene with various aromatic dicarboxylic acids using tri-Ph phosphite and pyridine as condensing agents. The following 8 dicarboxylic acids were applied: terephthalic, isophthalic, 4,4'-biphenyldicarboxylic, 4,4'-oxydibenzoic, 1,4- and 2,6-naphthalenedicarboxylic, and 4,4'-sulfonyldibenzoic acid as well as 2,2-bis(4-carboxyphenyl)-1,1,1,3,3,3-hexafluoropropane. The introduction of the bulky CF₃ group was to disrupt any regularity in chain packing while increasing the spacing or fractional free volume between the polymer chains. All the polyamides were non-crystalline and could be cast to transparent films. The polyamides containing CF₃ group showed increased solubility

in common solvents while thermal stability slightly decreased (in comparison to CF₃-free counterparts).

RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 21 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2003:453265 CAPLUS

DN 139:231062

TI Polyamides with pendant cinnamoyloxyethyl units

AU Rusu, Elena; Nechifor, Marioara

CS "Petru Poni" Inst. of Macromol. Chem., Iasi, 6600, Rom.

SO High Performance Polymers (2003), 15(2), 197-206

CODEN: HPPOEX; ISSN: 0954-0083

PB Sage Publications

DT Journal

LA English

AB A new series of polyamides was prepared from a diamine containing cinnamoyloxyethyl group and aromatic dicarboxylic acids by the phosphorylation method. The diamine containing cinnamoyloxyethyl group was prepared by esterification of 3,5-dinitrobenzoic acid followed by reduction of the dinitro compound to the diamine. The polyamides were synthesized in N-methyl-2-pyrrolidinone containing pyridine, tri-Ph phosphite and lithium chloride at 100 °C. The polyamides exhibited inherent viscosities in the range of 0.59-0.73 dL g⁻¹ and glass transition temps. ranging from 202 to 219 °C. The chemical and phys. properties of these polyamides are discussed herein.

L7 ANSWER 22 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2003:145470 CAPLUS
DN 139:133887
TI Synthesis and properties of 1,4-bis(4-aminophenoxy)naphthalene and its polyimides and polyamides
AU Yang, Chin-Ping; Chen, Jyh-An
CS Department of Chemical Engineering, Tatung Institute of Technology, Taipei, Taiwan
SO Taiwan Kexue (2001), 54(1), 1-25
CODEN: TKHSAU; ISSN: 0015-7791
PB Formosa Association for Advancement of Science
DT Journal
LA Chinese
AB A new diamine 1,4-bis(4-aminophenoxy)naphthalene (1,4-BAPON) was prepared through the nucleophilic displacement of 1,4-dihydroxynaphthalene with p-fluoronitrobenzene in the presence of K₂CO₃ in N,N-dimethylacetamide (DMAC), followed by catalytic reduction with hydrazine and Pd/C in ethanol. A series of novel aromatic polyimides containing bis(aminophenoxy) naphthalene units were synthesized from 1,4-BAPON and various aromatic tetracarboxylic dianhydrides and the poly(amic acid)s obtained had inherent viscosities of 0.81-1.33 dL/g. All the poly(amic acid)s could be solution cast and thermally converted into transparent, flexible, and tough polyimide films. These polyimides had glass transition temps. between 247°-281°. The 10% weight loss temps. of polyimides were recorded in the range of 521°-581° in nitrogen and 517°-575° in air atmospheric. A series of new polyamides (PAs, PAa-h) were synthesized by the direct polycondensation of 1,4-BAPON with various aromatic dicarboxylic acids with inherent viscosities of 0.84-1.26 dL/g. Most of the polyamides were soluble in aprotic polar solvents such as DMAC and NMP, and could be solution cast into transparent, flexible and tough films. The glass transition temps. of these polyamides were in the range of 250°-288°. The 10% weight loss temps. of polyamides were recorded in the range of 493°-523° under nitrogen and 483°-500° under air atmospheric. Compared to the polyamides with the similar structures like 1,5-bis(4-aminophenoxy)naphthalene (series PA') and 1,4-bis(4-aminophenoxy)benzene (series PA''); the solubility of PA_d was better than PA'_d and PA''_d in DMAC and NMP. While the other polymers in series PA showed better solubility than those in series PA'' in pyridine and m-cresol. The crystallinity of series PA was lower than series PA' and PA''.

L7 ANSWER 23 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2003:23745 CAPLUS
DN 138:238716
TI Synthesis and properties of novel aromatic poly(ester amide)s bearing naphthalene-2,7-diyl units
AU Hsiao, Sheng-Huei; Leu, Wen-Tsuen; Guo, Wenjeng
CS Department of Chemical Engineering, Tatung University, Taipei, 104, Taiwan
SO Polymer Journal (Tokyo, Japan) (2002), 34(12), 925-935
CODEN: POLJB8; ISSN: 0032-3896
PB Society of Polymer Science, Japan
DT Journal
LA English
AB Two new naphthalene ring-containing diamino-diester, 2,7-bis(4-aminobenzoyloxy)naphthalene (p-2) and 2,7-bis(3-aminobenzoyloxy)naphthalene (m-2), were synthesized from the condensation of 2,7-dihydroxynaphthalene with 4-nitrobenzoyl chloride and 3-nitrobenzoyl chloride, resp., followed by catalytic hydrogenation. Two series of naphthalene-containing poly(ester amide)s with inherent viscosities of 0.49-0.97 and 0.36-0.73 dL g⁻¹ were prepared by the phosphorylation polyamidation of p-2 and m-2, resp., with various aromatic dicarboxylic

acids. Most of the poly(ester amide)s had excellent solubilities in polar aprotic solvents such as N-methyl-2-pyrrolidone and N,N-dimethylacetamide, especially for the m-series polymers. Some of the poly(ester amide)s could be cast into transparent, flexible, and tough films from DMAc solns. The poly(ester amide)s derived from rigid dicarboxylic acids such as terephthalic acid, 4,4'-biphenyldicarboxylic acid, 2,6-naphthalenedicarboxylic acid and 4,4'-sulfonyldibenzoic acid were semicryst. and showed less solubility. Except for three examples, most of the poly(ester amide)s displayed discernible glass transitions between 187 and 237°C in the DSC traces. These poly(ester amide)s showed insignificant decomposition below 400°C in nitrogen or air. The investigation of the thermal decomposition of the poly(ester amide)s using IR spectroscopy and pyrolysis-gas chromatog./mass spectrometry (pyrolysis-GC/MS) indicated that the primary breakage of the ester linkages started at around 400°C, which initiated the polymer chain scission.

RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD.
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 24 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2002:571360 CAPLUS
DN 137:295312
TI Synthesis and characterization of novel soluble triphenylamine-containing aromatic polyamides based on N,N'-bis(4-aminophenyl)-N,N'-diphenyl-1,4-phenylenediamine
AU Liou, Guey-Sheng; Hsiao, Sheng-Huei; Ishida, Mina; Kakimoto, Masaaki; Imai, Yoshio
CS Department of Applied Chemistry, National Chi Nan University, Nantou Hsien, 545, Taiwan
SO Journal of Polymer Science, Part A: Polymer Chemistry (2002), 40(16), 2810-2818
CODEN: JPACEC; ISSN: 0887-624X
PB John Wiley & Sons, Inc.
DT Journal
LA English
AB A new triphenylamine-containing aromatic diamine, N,N'-bis(4-aminophenyl)-N,N'-diphenyl-1,4-phenylenediamine, was prepared by the condensation of N,N'-diphenyl-1,4-phenylenediamine with 4-fluoronitrobenzene, followed by catalytic reduction. A series of novel aromatic polyamides with triphenylamine units were prepared from the diamine and various aromatic dicarboxylic acids or their diacid chlorides via the direct phosphorylation polycondensation or low-temperature solution polycondensation. All the polyamides were amorphous and readily soluble in many organic solvents such as N,N-dimethylacetamide and N-methyl-2-pyrrolidone. These polymers could be solution cast into transparent, tough, and flexible films with good mech. properties. They had useful levels of thermal stability associated with relatively high glass-transition temps. (257-287°C), 10% weight-loss temps. in excess of 550°C, and char yields at 800°C in nitrogen higher than 72%.

RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 25 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2002:540517 CAPLUS
DN 137:248054
TI Synthesis and properties of new soluble aromatic polyamides and polyimides on the basis of N,N'-bis(3-aminobenzoyl)-N,N'-diphenyl-1,4-phenylenediamine
AU Liou, Guey-Sheng; Hsiao, Sheng-Huei
CS Department of Applied Chemistry, National Chi Nan University, Nantou, 545, Taiwan
SO Journal of Polymer Science, Part A: Polymer Chemistry (2002), 40(15), 2564-2574

CODEN: JPACEC; ISSN: 0887-624X

PB John Wiley & Sons, Inc.

DT Journal

LA English

AB A new N-phenylated amide (N-phenylamide) unit containing aromatic diamine, N,N'-bis(3-aminobenzoyl)-N,N'-diphenyl-1,4-phenylenediamine, was prepared by the condensation of N,N'-diphenyl-1,4-phenylenediamine with 3-nitrobenzoyl chloride, followed by catalytic reduction. Two series of organosol. aromatic poly(N-phenylamide-imides) and poly(N-phenylamide-amides) with inherent viscosities of 0.58-0.82 and 0.56-1.21 dL/g were prepared by a conventional two-stage method and the direct phosphorylation polycondensation, resp., from the diamine with various aromatic dianhydrides and aromatic dicarboxylic acids. All polyimides and polyamides are amorphous and readily soluble in many organic solvents such as N,N-dimethylacetamide and N-methyl-2-pyrrolidone. These polymers could be solution cast into transparent, tough, and flexible films with high tensile strengths. These polyimides and polyamides had glass-transition temps. in the ranges of 230-258 and 196-229°C, resp. Decomposition temps. of the polyimides for 10% weight loss all occurred above 500°C in both nitrogen and air atmospheres.

RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 26 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2002:5421 CAPLUS

DN 136:232641

TI Thermotropic liquid-crystalline polyesters of 4,4'-biphenol and phenyl-substituted 4,4'-biphenols with 4,4'-oxybisbenzoic acid

AU Bhowmik, Pradip K.; Han, Haesook; Cebe, James J.; Burchett, Ronald A.

CS Department of Chemistry, University of Nevada at Las Vegas, Las Vegas, NV, 89154-4003, USA

SO Journal of Polymer Science, Part A: Polymer Chemistry (2001), Volume Date 2002, 40(1), 141-155

CODEN: JPACEC; ISSN: 0887-624X

PB John Wiley & Sons, Inc.

DT Journal

LA English

AB A series of thermotropic polyesters, derived from 4,4'-biphenol (BP), 3-phenyl-4,4'-biphenol (MPBP), and 3,3'-bis(phenyl)-4,4'-biphenol (DPBP), 4,4'-oxybisbenzoic acid (4,4'-OBBA), and other aromatic dicarboxylic acids as comonomers, were prepared by melt polycondensation and were characterized for their thermotropic liquid-crystalline (LC) properties with a variety of exptl. techniques. The polymer of BP with 4,4'-OBBA and its copolymers with either 50 mol % terephthalic acid or 2,6-naphthalenedicarboxylic acid had relatively high values of the crystal-to-nematic transition (448-460°), above which each of them formed a nematic LC phase. In contrast, the homopolymers of MPBP and DPBP had low fusion temps. and low isotropization temps. and formed nematic melts above the fusion temps. Each of these two polymers also exhibited two glass-transition temps., which were associated with vitrified noncryst. (amorphous) regions and vitrified LC domains, as obtained directly from melt polycondensation. As expected, they had higher glass-transition temps. (176-211°) than other LC polyesters and had excellent thermal stability (516-567 °C). The fluorescence properties of the homopolymer of DPBP with 4,4'-OBBA, which was soluble in common organic solvents such as chloroform and THF, were also included in this study. For example, it had an absorption spectrum (λ_{max} = 259 and 292 nm), an excitation spectrum (λ_{ex} = 258 and 292 nm with monitoring at 350 nm), and an emission spectrum (λ_{em} = 378 nm with excitation at 330 nm) in chloroform.

RE.CNT 62 THERE ARE 62 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 27 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2001:501371 CAPLUS

DN 135:227567

TI High-temperature polymers for advanced microelectronics
AU Maier, Gerhard; Banerjee, Susanta; Haussmann, Jorg; Sezi, Recai
CS Lehrstuhl fur Makromolekulare Stoffe, Technische Universitat Munchen,
Garching, D-85747, Germany
SO High Performance Polymers (2001), 13(2), S107-S115
CODEN: HPPOEX; ISSN: 0954-0083
PB Institute of Physics Publishing
DT Journal
LA English

AB Several series of aromatic polyethers and polybenzoxazoles with high thermal stability and low dielec. constant were prepared and characterized. The polyethers were synthesized by nucleophilic aromatic displacement of fluorine with phenoxides. In order to avoid strongly polar groups such as carbonyl and sulfone, trifluoromethyl groups were used to activate the fluorine for displacement. An addnl. benefit of the presence of the trifluoromethyl groups is the decreased dielec. constant, which fluorinated materials exhibit. This is attributed to two factors: the strong electronegativity of fluorine, resulting in very low polarizability of the C-F bonds, and the larger radius of a fluorine atom in comparison with a hydrogen atom, resulting in increased free volume. Trifluoromethyl substituted terphenyl and quadriphenyl poly(arylether)s prepared in this study exhibit decomposition temps. far in excess of 500°C, even in air, dielec. consts. below three, and mech. properties comparable to engineering plastics such as polycarbonate and high-performance thermoplastics such as PEEK. Poly(benzoxazole)s were prepared with and without fluorine substituents. Since most of the poly(benzoxazole)s were insol., they were prepared via soluble poly(hydroxyamide) precursors, which were converted to the final polymers by thermal treatment. These materials had dielec. consts. as low as 2.69 and also decomposition temps. far above 500°C in air.

RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 28 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2001:267619 CAPLUS
DN 135:61665
TI A new polycondensation involving dicarboxylic acids with differently activated carboxyl groups by TsCl/DMF/Py
AU Higashi, Fukuji; Tobe, Akira
CS Faculty of Engineering, Tokyo University of Agriculture and Technology, Tokyo, 184-8588, Japan
SO Macromolecular Chemistry and Physics (2001), 202(5), 745-749
CODEN: MCHPES; ISSN: 1022-1352

PB Wiley-VCH Verlag GmbH
DT Journal
LA English
AB Aromatic dicarboxylic acids, such as terephthalic (TPA) and isophthalic (IPA) acids, having different structures (and, hence, different reactivities) of the activated carboxyl groups were prepared in situ by the reaction of the diacids with tosyl chloride-DMF-pyridine (TsCl/DMF/Py) containing various amts. of DMF. The polycondensation of the above acids with activated carboxyl groups using 0.3 equiv of DMF relative to dicarboxylic acids and by dropwise addition of bisphenols significantly improved the η_{inh} values of the IPA/TPA(50/50)-2,2-bis(4-hydroxyphenyl)propane (BPA) and IPA/TPA(50/50)-methylhydroquinone polymers. It was also the case for the polycondensations of BPA and various combinations of aromatic dicarboxylic acids other than IPA/TPA. It is likely that various structures of the aggregates between the activated IPA and TPA are formed in a mixture of them, as shown by the evaluation of m.ps. of mixts. of the acid di-Me esters prepared by quenching the aggregates with methanol. Effect of the amts. of DMF and the dropwise addition of BPA upon the chain structure of the oligomers formed at an earlier stage was also examined.

RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 29 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2000:617991 CAPLUS
DN 133:335555
TI Synthesis and characterization of aromatic poly(ether ketone)s containing
cyclotriphosphazene units. II
AU Tunca, Umit; Hizal, Gurkan
CS Department of Chemistry, Istanbul Technical University, Istanbul, 80626,
Turk.
SO Journal of Polymer Science, Part A: Polymer Chemistry (2000), 38(13),
2300-2305.
CODEN: JPACEC; ISSN: 0887-624X

PB John Wiley & Sons, Inc.

DT Journal

LA English

AB A new monomer, bis(4-carboxyphenoxy) tetrakis(4-fluorophenoxy)cyclotriphosphazene (I), was synthesized using a two-step reaction sequence. The direct polycondensation of I and/or 4,4'-dicarboxydiphenyl ether with aromatic ethers was carried out in P205/methanesulfonic acid (Eaton's reagent) at 120° for 3 h to give two series of aromatic poly(ether ketone)s containing cyclotriphosphazene units.

The effect of the introduction of the cyclotriphosphazene group on the solubility and thermal properties of these polymers was discussed with relation to the cyclotriphosphazene content.

RE.CNT 14 THERE ARE 14 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 30 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN
AN 2000:203939 CAPLUS
DN 132:308767
TI Synthesis and properties of oxygen-bridged aromatic polyesters based on
isomeric naphthalenediols
AU Choi, E-Joon; Choi, Bong-Ku; Kim, Jae-Hoon; Lee, Sang-Chul; Hill, David J.
T.
CS Department of Polymer Science and Engineering, Kumoh National University
of Technology, Kyungbuk, 730-701, S. Korea
SO Korea Polymer Journal (2000), 8(1), 12-18
CODEN: KPJOE2; ISSN: 1225-5947

PB Polymer Society of Korea

DT Journal

LA English

AB Six aromatic polyesters with ether linkages were prepared from 4,4'-oxybis(benzoic acid) and 1,4-, 1,5-, 1,6-, 2,3-, 2,6- and 2,7-naphthalenediol (ND) isomers. The solution viscosity nos. ranged from 0.23 to 0.65 dL/g. The glass transition temps. ranged from 142 to 179°C. The initial decomposition temps. were all above 400°C, and the residue wts. at 600°C were in the range of 50-64%. Only the polyesters derived from 1,5- and 2,6-NDs, which have a linear linking mode, were found to be semicryst. and could form thermotropically nematic phase. Multiple melting phenomena and annealing of the polyester derived from 1,5-ND and related polymers are described. The exptl. results show that the polyester derived from 1,4-ND of linear shape was amorphous and non-liquid crystalline. Particularly, the polyester derived from 2,3-ND could form a smectic mesophase as banana-shaped mols., and this is ascribed to the C2v symmetry where highly kinked mols. are packed in the same direction.

RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 31 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1999:805853 CAPLUS
DN 132:137791
TI Preparation and characterization of aromatic polyamides based on a
bis(ether-carboxylic acid) or a dietheramine extended from

1,1-bis(4-hydroxyphenyl)-1-phenylethane

AU Hsiao, Sheng-Huei; Yang, Chin-Ping; Chuang, Ming-Hung; Hsiao, Hsiu-Chun
CS Department of Chemical Engineering, Tatung University, Taipei, Taiwan
SO Journal of Polymer Science, Part A: Polymer Chemistry (2000), 38(1),
247-260

CODEN: JPACEC; ISSN: 0887-624X

PB John Wiley & Sons, Inc.

DT Journal

LA English

AB Thermoplastic and organic-soluble aromatic polyamides containing both bulky triphenylethane units and flexible ether linkages were prepared directly from 1,1-bis[4-(4-carboxyphenoxy)phenyl]-1-phenylethane with various aromatic diamines or from 1,1-bis[4-(4-aminophenoxy)phenyl]-1-phenylethane with various aromatic dicarboxylic diacids in presence of tri-Ph phosphite and pyridine. These polyamides had inherent viscosities ranging from 0.71 to 1.77 dL/g. All the polymers easily were dissolved in aprotic polar solvents such as N-methyl-2-pyrrolidone and N,N-dimethylacetamide, and some even could be dissolved in less polar solvents such as THF. The flexible and tough films cast from the polymer solns. possessed tensile strengths of 89 to 104 MPa. The polyamides were thermally stable up to 460°C in air or nitrogen. Glass transition temps. of these polyamides were observed in a range of 179 to 268°C via differential scanning calorimetry or thermomech. anal.

RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 32 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1999:784824 CAPLUS

DN 132:108395

TI Synthesis and characterization of novel aromatic polyamides with polyalicyclic cardo groups

AU Hsiao, Sheng-Huei; Yang, Chin-Ping; Chuang, Ming-Hung; Lin, Shene-Jen

CS Department of Chemical Engineering, Tatung University, Taipei, 104, Taiwan

SO Journal of Polymer Science, Part A: Polymer Chemistry (1999), 37(24),
4510-4520

CODEN: JPACEC; ISSN: 0887-624X

PB John Wiley & Sons, Inc.

DT Journal

LA English

AB 5,5-Bis[4-(4-carboxyphenoxy)phenyl]hexahydro-4,7-methanoindan (I) and 5,5-bis[4-(4-aminophenoxy)phenyl]hexahydro-4,7-methanoindan (II) were prepared in two steps starting from the aromatic nucleophilic halogen-displacement of p-fluorobenzonitrile and p-chloronitrobenzene, resp., with 5,5-bis(4-hydroxyphenyl)hexahydro-4,7-methanoindan in the presence of potassium carbonate in N,N-dimethylformamide (DMF). Using tri-Ph phosphite and pyridine as condensing agents, two series of polyamides having polyalicyclic cardo units were directly polycondensated from I with various aromatic diamines, or from II with various aromatic dicarboxylic acids in N-methyl-2-pyrrolidone (NMP) solution containing dissolved calcium chloride. High mol. weight polyamides with inherent viscosity of 0.73-1.44 dL/g were obtained. All polymers were readily soluble in polar aprotic solvents such as NMP and N,N-dimethylacetamide (DMAc) and afforded transparent, flexible, and tough films by solution casting. The glass-transition temps. (T_g of the aromatic polyamides is 219-253° by DSC, and the 10% weight loss temperature in nitrogen and air was above 467 and 465°, resp. Comparative data of some polyamides with an isomeric repeat unit are presented.

RE.CNT 27 THERE ARE 27 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 33 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1999:742337 CAPLUS

DN 132:64831

TI Syntheses and properties of new aromatic polyamides based on
1,4-bis(4-aminophenoxy)naphthalene and comparison with its related isomers
AU Yang, Chin-Ping; Chen, Jyh-An
CS Department of Chemical Engineering, Tatung Institute of Technology,
Taipei, Taiwan
SO Polymer Journal (Tokyo) (1999), 31(11-1), 955-960
CODEN: POLJB8; ISSN: 0032-3896
PB Society of Polymer Science, Japan
DT Journal
LA English

AB New polyamides were synthesized by the direct polycondensation of
1,4-bis(4-aminophenoxy)naphthalene with various aromatic dicarboxylic acids.
These polymers were obtained in quant. yields with inherent viscosities of
0.84-1.26dLg-1. Most of the polymers were soluble in aprotic polar solvents
such as N,N-dimethylacetamide and N-methyl-2-pyrrolidone, and could be
solution cast into transparent, flexible and tough films. The glass
transition temps. of these polyamides ranged from 250-288°C.
Thermogravimetric analyses confirmed that these polymers were fairly
stable up to 430°C, and 10% weight loss temps. were recorded in the
range of 493-523°C under nitrogen and 483-500°C under air
atmospheric. Compared to polyamides with similar structures like
1,5-bis(4-aminophenoxy)naphthalene and 1,4-bis(4-aminophenoxy)benzene or
the isomeric 1,4-bis(4-carboxylphenoxy)naphthalene, the new polymers had
lower crystallinity, better solubility, and high thermal stability.

RE.CNT 18 THERE ARE 18 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 34 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1999:625756 CAPLUS
DN 131:322991

TI Thermotropic copolyesters prepared by solution polycondensation with
TsCl/DMF/pyridine condensing agent
AU Higashi, Fukuji; Mitani, Kiyoshi
CS Department of Engineering, Tokyo University of Agriculture and Technology,
Tokyo, 184-8588, Japan
SO Journal of Polymer Science, Part A: Polymer Chemistry (1999), 37(19),
3710-3714
CODEN: JPACEC; ISSN: 0887-624X

PB John Wiley & Sons, Inc.
DT Journal
LA English

AB When mixts. of terephthalic acid (TPA) and 1,6-naphthalenedicarboxylic
acid (NDC) or 4,4'-dicarboxydiphenyl ether (DCDPE), TPA and isophthalic
acid (IPA) were reacted in pyridine (Py) with tosyl chloride (TsCl)/DMF/Py
to activate the diacids, the reaction mixts. was soluble in Py, despite each
of the sep. activated diacids being insol. The solubility of the activated
diacids was examined at a variety of acid comps. and temps. It was
expected that a competitive reaction among the diacids with an aromatic diol
in solution might be different from those in the melt, resulting in a
different distribution of the acids in the copolymers. The
TPA/NDC-phenylhydroquinone and DCDPE/TPA/IPA-chlorohydroquinone copolymers
were prepared in solution using TsCl/DMF/Py as the condensing agent and the
transition temps. of these liquid crystalline copolyesters were compared to
those

obtained by melt copolycondensation. A practical depression of the
transition temperature by the solution polycondensation was observed

RE.CNT 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 35 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1999:278793 CAPLUS
DN 131:59196

TI Synthesis and characterization of new adamantane-based cardo polyamides
AU Hsiao, Sheng-Huei; Li, Chin-Tang

CS Department of Chemical Engineering, Tatung Institute of Technology,
Taipei, Taiwan
SO Journal of Polymer Science, Part A: Polymer Chemistry (1999), 37(10),
1435-1442
CODEN: JPACEC; ISSN: 0887-624X
PB John Wiley & Sons, Inc.
DT Journal
LA English

AB A novel series of cardo polyamides bearing the 2,2-adamantyldiene unit were directly prepared from a new adamantane-based dietheramine, 2,2-bis[4-(4-aminophenoxy)phenyl]adamantane, with various aromatic dicarboxylic acids using tri-Ph phosphite (TPP) and pyridine as condensing agents. These polyamides had inherent viscosities ranging from 0.44 to 0.89 dL/g. All the polymers showed an amorphous nature by X-ray diffraction measurements, and most of them were easily soluble in polar aprotic solvents such as NMP and DMAc. The flexible and tough films cast from the polymer solns. possessed a tensile strength of 91-101 MPa and an elongation-at-break of 5-13%. The polyamides were thermally stable up to 450°C in air or in nitrogen. Most of them revealed distinct glass transition on the differential scanning calorimetry traces, and their Tgs were recorded in the range of 230-269 °C. Softening temps. (Ts) of these polyamides were in the range of 272-308 °C by thermomech. anal.

RE.CNT 49 THERE ARE 49 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 36 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1998:682902 CAPLUS
DN 129:316646

TI Thermostable aromatic poly(1,3,4-oxadiazole)s from multi-ring flexible diacids

AU Maglio, Giovanni; Palumbo, Rosario; Tortora, Mariarosaria; Trifuoggi, Marco; Varricchio, Giovanna

CS Dip. Chim., Univ. Napoli 'Federico II', Naples, I-80134, Italy

SO Polymer (1998), 39(25), 6407-6413

CODEN: POLMAG; ISSN: 0032-3861

PB Elsevier Science Ltd.

DT Journal

LA English

AB A series of aromatic poly(1,3,4-oxadiazole)s, PODZs, were prepared either by direct polycondensation of dicarboxylic acids with hydrazine sulfate using a polyphosphoric acid/methanesulfonic acid mixture or by thermal cyclodehydration of the corresponding poly(hydrazide)s. Various aromatic diacids containing flexible p-oxyphenylene joints and/or bulky isopropylidene or hexafluoroisopropylidene groups in the main chain were used to produce amorphous PODZs soluble in strongly polar organic solvents and having inherent viscosities up to 1.1 dL g⁻¹. The polymers were characterized by Fourier-transform IR and ¹H and ¹³C NMR spectroscopy, and their thermal properties were investigated by differential scanning calorimetry and dynamic thermogravimetric anal. The glass transition temps., Tg, lie in the range 190-295°, and depend both on the number of aryloxy groups and on the presence of bulky groups. The PODZs show good thermal resistance in nitrogen up to 440°.

RE.CNT 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 37 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1998:373479 CAPLUS

DN 129:68105

TI Synthesis of polyamides derived from 4,9-bis(4-aminophenyl)diamantane

AU Chern, Yaw-Terng

CS Inst. Chem. Eng., Natl. Taiwan Univ. Sci. Technol., Taipei, 106, Taiwan

SO Polymer (1998), 39(17), 4123-4127

CODEN: POLMAG; ISSN: 0032-3861

PB Elsevier Science Ltd.

DT Journal

LA English

AB A series of new polyamides was synthesized by direct polycondensation of the 4,9-bis(4-aminophenyl)diamantane with various dicarboxylic acids. The most polyamides had high inherent viscosities, ranging from 1.08 to 2.10 dL/g. Polyamides had tensile strength up to 92.8 MPa and initial modulus reached 2.1 GPa. Although these polyamides were incorporated by the quite rigid diphenyldiamantane unit, surprisingly, all three polyamide films have tough quality. Dynamic mech. anal. reveals that the polyamides have three relaxations. Their α relaxations occurred at high temps. ranging from 417 to 489°C. All three polyamide films show rather high G' values (above 108 Pa), even at temps. exceeding 400°C. The glass transition of polyamide derived from (\pm)-1,3-cyclohexanedicarboxylic acid appeared at 417°C.

RE.CNT 28 THERE ARE 28 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 38 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1998:299286 CAPLUS

DN 129:16455

TI High α transitions of new polyamides based on diamantane

AU Chern, Yaw-Terng; Wang, Wen-Liang

CS Institute of Chemical Engineering, National Taiwan University of Science and Technology, Taipei, 106, Taiwan

SO Journal of Polymer Science, Part A: Polymer Chemistry (1998), 36(8), 1257-1263

CODEN: JPACEC; ISSN: 0887-624X

PB John Wiley & Sons, Inc.

DT Journal

LA English

AB A series of new polyamides was synthesized by direct polycondensation of the 1,6-bis(4-aminophenyl)diamantane with various dicarboxylic acids. The soluble polyamides had high inherent viscosities, ranging from 0.73 to 1.21 dL/g. Polyamides derived from 5-tert-butylisophthalic acid and (\pm)-1,3-cyclohexanedicarboxylic acid were soluble in N-methyl-2-pyrrolidone (NMP) and pyridine. When NMP and N-dimethylacetamide (DMAC) were added with 3% (w/v) LiCl, the solubilities of polyamides derived from 4,4'-oxybis(benzoic acid) and cis-1,4-cyclohexanedicarboxylic acid were markedly enhanced. Polyamides had tensile strengths of up to 87.8 MPa, elongation to breakage values of up to 19.3%, and initial moduli of up to 2.1 GPa. Dynamic mech. anal. reveals that the polyamides have three relaxations. Their α relaxations occurred at high temps., ranging from 380 to 462°C. Three of polyamides exhibited good retention of storage modulus (above 108 Pa) at a temperature exceeding 410°C.

RE.CNT 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 39 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1998:224309 CAPLUS

DN 128:244429

TI Synthesis and characterization of aromatic polyamides and polyimides from trimethyl- and di-tert-butylhydroquinone based ether linked diamines

AU Yagci, Havva; Mathias, Lon J.

CS Department of Polymer Science, University of Southern Mississippi, Hattiesburg, MS, 39406-0076, USA

SO Polymer Preprints (American Chemical Society, Division of Polymer Chemistry) (1998), 39(1), 262-263

CODEN: ACPPAY; ISSN: 0032-3934

PB American Chemical Society, Division of Polymer Chemistry

DT Journal

LA English

AB Structure-property relationship in aromatic polyamides and polyimides incorporating substituted hydroquinones into the diamine segments was

studied as an attempt to tailor structure for better processability without intolerable losses of thermal properties. Incorporation of Me and t-Bu groups ortho to flexible ether linkages imparts segmental rigidity and keeps the glass transition temps. high. These substituents also prevent coplanarity of the aromatic rings and therefore prevent strong inter- and intra- mol. interactions, crystallinity and hydrogen bonding which in turn improve polymer solubility. Although polyamides from both diamines showed excellent properties, polyimides of trimethylhydroquinone based diamine did not show dramatic improvement in properties.

RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 40 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1998:201235 CAPLUS

DN 128:205198

TI Synthesis and characterization of new polyamides derived from 1,3-bis[4-(4-aminophenoxy)phenyl]adamantane

AU Chern, Yaw-Terng; Lin, Kuo-Sheng; Kao, Shen C.

CS Institute of Chemical Engineering, National Taiwan University of Science and Technology, Taipei, 106, Taiwan

SO Journal of Applied Polymer Science (1998), 68(2), 315-321

CODEN: JAPNAB; ISSN: 0021-8995

PB John Wiley & Sons, Inc.

DT Journal

LA English

AB Several new polyamides were synthesized by direct polycondensation of the 1,3-bis[4-(4-aminophenoxy)phenyl]adamantane (I) with various dicarboxylic acids. The polyamides had inherent viscosities and number-average mol. wts.

(Mn)

of 0.46-0.96 dL/g and 28,000-109,000, resp. All polyamides had good solubilities and were soluble in N-methyl-2-pyrrolidone (NMP), N,N-dimethylacetamide (DMAC), N,N-dimethylformamide (DMF), and pyridine. Polyamides had tensile strengths of up to 72.3 MPa, elongation to breakage values of up to 10.2%, and initial modulus of up to 2.1 GPa. Their glass transition temps. were found to be 228-269°C and 252-307°C using differential scanning calorimetry (DSC) and dynamic mech. anal. (DMA), resp. The temps. of polyamides at a 5% weight loss ranged from 395 to 435°C in air and from 400 to 450°C in a N₂ atmosphere.

RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 41 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1998:45724 CAPLUS

DN 128:115317

TI Synthesis and properties of novel aromatic polyamides containing 2-methyl-4,5-oxazolediyl structure

AU Akutsu, Fumihiko; Inoki, Mari; Sunouchi, Kazuhiro; Sugama, Yuji; Kasashima, Yoshio; Naruchi, Kiyoshi; Miura, Masatoshi

CS Department of Applied Chemistry, Faculty of Engineering, Chiba University, Chiba, 263, Japan

SO Polymer (1998), 39(8-9), 1637-1641

CODEN: POLMAG; ISSN: 0032-3861

PB Elsevier Science Ltd.

DT Journal

LA English

AB Novel aromatic polyamides having 2-methyl-4,5-oxazolediyl units in the main chains were synthesized. The polyamides were prepared from 4,5-di(4-aminophenyl)-2-methyloxazole (DAPMO) and/or 4,4'-(4,5-(2-methyl)oxazole)dibenzoic acid (MODBA) by the direct polycondensation method. The inherent viscosity of the polyamides is 0.64-1.95 dL/g. The glass transition temperature of the polyamides obtained is 280-354°, and the thermal decomposition temperature 376-421°. The polyamides exhibited good solubility in many organic solvents such as m-cresol, N,N-dimethylacetamide, 1-methyl-2-pyrrolidone, N,N-DMF and concentrate H₂SO₄ at 2.0% (w/v). All the

polyamides showed amorphous morphol. The introduction of the zigzag, rigid and polar 2-methyl-4,5-oxazolidiyl structure into the main chain of polyamides was effective in improving the solubility without adverse effect on thermal properties.

RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 42 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1997:476601 CAPLUS

DN 127:1176787

TI Synthesis and properties of aromatic polyamides derived from 2,6-bis(4-aminophenoxy)naphthalene and various aromatic dicarboxylic acids

AU Yang, Chin-Ping; Hsiao, Sheng-Huei; Yang, Chun-Cheng

CS Dep. Chem. Eng., Tatung Inst. Technology, Taipei, Taiwan

SO Journal of Polymer Science, Part A: Polymer Chemistry (1997), 35(11), 2147-2156

CODEN: JPACEC; ISSN: 0887-624X

PB Wiley

DT Journal

LA English

AB 2,6-Bis(4-aminophenoxy)naphthalene (2,6-BAPON) was synthesized in two steps from the condensation of 2,6-dihydroxynaphthalene with p-chloronitrobenzene in the presence of potassium carbonate, giving 2,6-bis(4-nitrophenoxy)naphthalene, followed by hydrazine hydrate/Pd-C reduction. A series of new polyamides was synthesized by the direct polycondensation of 2,6-BAPON with various aromatic dicarboxylic acids in the N-methyl-2-pyrrolidone (NMP) solution containing dissolved metal salts such as CaCl₂ or LiCl using tri-Ph phosphite and pyridine as condensing agents. The polymers were obtained in quant. yields with inherent viscosities of 0.62-2.50 dL/g. Most of the polymers were soluble in aprotic dipolar solvents such as N,N-dimethylacetamide and NMP, and could be solution cast into transparent, flexible, and tough films. The casting films had yield strengths of 84-105 MPa, tensile strengths of 68-95 MPa, elongation at break of 8-36%, and tensile moduli of 1.4-2.1 GPa. The glass transition temps. of the polyamides were in the range 155-225°C, and their 10% weight loss temps. were above 505°C in nitrogen and above 474°C in air.

L7 ANSWER 43 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1997:430388 CAPLUS

DN 127:109276

TI Synthesis, thermal and radiation sensitivities of the fluorine containing methylene-bridged aromatic polyesters

AU Choi, E-Joon; Hill, David J.; Kim, Ki Yup; O'Donnell, James H.; Pomery, Peter J.

CS Polymer Materials and Radiation Group, Dep. Chemistry, Univ. Queensland, Brisbane, 4072, Australia

SO Polymer (1997), 38(14), 3669-3676

CODEN: POLMAG; ISSN: 0032-3861

PB Elsevier

DT Journal

LA English

AB A series of fluorine-containing, methylene-bridged aromatic polyesters were synthesized by interfacial polymerization from 4,4'-oxybis(benzoic acid) or 4,4'-(hexafluoroisopropylidene)bis(benzoic acid) with bisphenol A or hexafluorobisphenol A. The effect of the fluorine substituent on the structure and properties of the polyesters was investigated by systematically varying the position and content of the fluorine substitution. Incorporation of perfluoroisopropylidene groups in the polymer backbone enhanced the solubility of the polyesters in various organic solvents, and all of these polyesters were soluble in m-cresol as well as chloroform and THF. The inherent viscosities of these solns. ranged from 0.15 to 0.82 dL g⁻¹, depending on the polyester structure. The structures of the polyesters were confirmed by IR spectroscopy, ¹H and ¹³C NMR

spectroscopies and elemental analyses. The polyesters were amorphous by x-ray diffraction measurements. Tg, thermal stabilities, and radiation sensitivities of the polymers have been investigated. The temps. for a 5-% weight loss during thermal degradation of the polymers containing the oxy-bis(benzoic acid) units were approx. 100-140° higher than those containing the hexafluoroisopropylidene-bis(benzoic acid) units, but fluorine substitution in the bisphenol A units had only a small effect on this degradation temperature. There was little difference between the sensitivities

of

the polymers to high energy radiation degradation, with the G-values for radical formation at 77 K for all of the polymers lying in the range 0.38-0.46, but here fluorine substitution tended to enhance polymer stability.

L7 ANSWER 44 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1997:274510 CAPLUS

DN 126:317754

TI Synthesis and properties of polyimides, polyamides and poly(amide-imide)s from ether diamine having the spirobichroman structure

AU Hsiao, Sheng-Huei; Yang, Chin-Ping; Yang, Ching-Yen

CS Dep. Chem. Engin., Tatung Inst. Technology, Taichung, Peop. Rep. China

SO Journal of Polymer Science, Part A: Polymer Chemistry (1997), 35(8), 1487-1497

CODEN: JPACEC; ISSN: 0887-624X

PB Wiley

DT Journal

LA English

AB A novel spirobichroman unit-containing dietheramine, 6,6'-bis(4-aminophenoxy)-4,4,4',4',7,7'-hexamethyl-2,2'-spirobichroman (I), was prepared by the nucleophilic substitution of 6,6'-dihydroxy-4,4,4',4',7,7'-hexamethyl-2,2'-spirobichroman with p-chloronitrobenzene in the presence of K₂CO₃ followed by hydrazine catalytic reduction of the intermediate dinitro compound. A series of polyimides were synthesized from I and various aromatic dianhydrides by a conventional two-stage procedure through the formation of poly(amic acid)s followed by thermal imidization. The intermediate poly(amic acid)s had inherent viscosities of 1.00-2.78 dL/g. All the poly(amic acid)s could be thermally cyclodehydrated into flexible and tough polyimide films, and some polyimides were soluble in polar solvents such as N-methyl-2-pyrrolidone, N,N-dimethylacetamide (DMAC), and N,N-dimethylformamide. These polyimides had glass transition temps. (Tg) in the range of 236-256°C, and 10% weight loss occurred up to 450°C. Furthermore, a series of polyamides and poly(amide-imide)s with inherent viscosities of 0.71-2.29 dL/g were prepared by direct polycondensation of I with various aromatic dicarboxylic acids and amide-imide ring-containing dicarboxylic acids by means of tri-Ph phosphite and pyridine. All the polyamides and poly(amide-imide)s were readily soluble in polar solvents such as DMAC, and tough and flexible films could be cast from their DMAC solns. These polymers had glass transition temps. in the range of 137-288°C and 10% weight loss temps. in the range of 419-443°C in air and 404-436°C in nitrogen, resp.

RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 45 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1997:228800 CAPLUS

DN 126:305846

TI Syntheses and properties of aromatic polyamides derived from 4,4'-oxydibenzoic acid and aromatic diamines

AU Hsiao, Sheng-Huei; Yu, Chou-Huan

CS Department of Chemical Engineering, Tatung Institute of Technology, Taipei, 104, Taiwan

SO Journal of Polymer Research (1996), 3(4), 239-245

CODEN: JPOREP; ISSN: 1022-9760

PB Polymer Society

DT Journal
 LA English
 AB A series of aromatic polyamides were prepared by direct polycondensation of 4,4'-oxydibenzoic acid with various aromatic diamines in N-methyl-2-pyrrolidinone solution containing dissolved CaCl₂ using tri-Ph phosphite and pyridine as condensing agents. The polyamides had inherent viscosity 0.21-1.48 dL/g. Most of the polymers were soluble in organic solvents and could be solution-cast into flexible, strong films. The T_g (170-275°) of the polyamides was determined using DSC. TGA indicated no significant weight loss at <450° in air or N.
 RE.CNT 22 THERE ARE 22 CITED REFERENCES AVAILABLE FOR THIS RECORD
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L7 ANSWER 46 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN
 AN 1997:91788 CAPLUS
 DN 126:144846
 TI New electric insulating film - poly(ethylene terephthalate p-oxybenzoate)
 AU Tian, Zheng-Hua; Deng, Yuan; Zhu, Bao-Xiang
 CS Anshan Inst. Iron & Steel Technology, Anshan, 114002, Peop. Rep. China
 SO Gaodeng Xuexiao Huaxue Xuebao (1997), 18(1), 160-162
 CODEN: KTHPDM; ISSN: 0251-0790
 PB Gaodeng Jiaoyu Chubanshe
 DT Journal
 LA Chinese
 AB A series of polyesters poly(ethylene terephthalate p-oxybenzoate) derived from di-Me terephthalate, ethylene glycol, and 4,4'-oxybis(benzoic acid) was prepared and characterized. The incorporation of 4,4'-oxydiphenylene group into the main chain reduced the m.p. (T_m), decreased the crystallization rate, and increased the thermal oxidative stability of the polyesters. Transparent films with good elec. properties and mech. properties were obtained by static drawing of the polyesters. Due to the presence of stable aromatic ether structure, the decrease of T_m did not reduce the thermal oxidative stability. The polyester was useful for the preparation of heat-resistant thick film for channel insulators of elec. motor.

L7 ANSWER 47 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN
 AN 1993:213763 CAPLUS
 DN 118:213763
 TI Aromatic polyether-ketones with high glass transition temperature and heat resistance
 IN Mori, Shinichiro; Miyata, Shiro; Yonezawa, Nobuyuki
 PA Nippon Kokan K. K., Japan
 SO Jpn. Kokai Tokkyo Koho, 6 pp.
 CODEN: JKXXAF

DT Patent
 LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 04272924	A	19920929	JP 1991-33205	19910227
PRAI	JP 1991-33205		19910227		

AB A title polymer with glass transition temperature 163.5° was prepared by copolymn. of 2,2'-dimethoxydiphenyl ether and 4,4'-oxybis(benzoic acid) in the presence of a P205-methanesulfonic acid mixture at 60°.

=> s 14

L8 745 L4

=> s 18 and crystalline

78187 CRYSTALLINE

L9 14 L8 AND CRYSTALLINE

=> d 1-14 bib abs

L9 ANSWER 1 OF 14 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2005:400043 CAPLUS

DN 143:96951

TI Correlation between molecular dipole moment and centrosymmetry in some crystalline diphenyl ethers.

AU Dey, Archan; Desiraju, Gautam R.

CS School of Chemistry, University of Hyderabad, Hyderabad, 500 046, India

SO Chemical Communications (Cambridge, United Kingdom) (2005), (19), 2486-2488

CODEN: CHCOFS; ISSN: 1359-7345

PB Royal Society of Chemistry

DT Journal

LA English

AB The presence of a large mol. dipole moment in di-Ph ethers leads unequivocally to a centrosym. crystal structure.

RE.CNT 29 THERE ARE 29 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 2 OF 14 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2002:5421 CAPLUS

DN 136:232641

TI Thermotropic liquid-crystalline polyesters of 4,4'-biphenol and phenyl-substituted 4,4'-biphenols with 4,4'-oxybisbenzoic acid

AU Bhowmik, Pradip K.; Han, Haesook; Cebe, James J.; Burchett, Ronald A.

CS Department of Chemistry, University of Nevada at Las Vegas, Las Vegas, NV, 89154-4003, USA

SO Journal of Polymer Science, Part A: Polymer Chemistry (2001), Volume Date 2002, 40(1), 141-155

CODEN: JPACEC; ISSN: 0887-624X

PB John Wiley & Sons, Inc.

DT Journal

LA English

AB A series of thermotropic polyesters, derived from 4,4'-biphenol (BP), 3-phenyl-4,4'-biphenol (MPBP), and 3,3'-bis(phenyl)-4,4'-biphenol (DPBP), 4,4'-oxybisbenzoic acid (4,4'-OBBA), and other aromatic dicarboxylic acids as comonomers, were prepared by melt polycondensation and were characterized for their thermotropic liquid-crystalline (LC) properties with a variety of exptl. techniques. The polymer of BP with 4,4'-OBBA and its copolymers with either 50 mol % terephthalic acid or 2,6-naphthalenedicarboxylic acid had relatively high values of the crystal-to-nematic transition ($448-460^\circ$), above which each of them formed a nematic LC phase. In contrast, the homopolymers of MPBP and DPBP had low fusion temps. and low isotropization temps. and formed nematic melts above the fusion temps. Each of these two polymers also exhibited two glass-transition temps., which were associated with vitrified noncryst. (amorphous) regions and vitrified LC domains, as obtained directly from melt polycondensation. As expected, they had higher glass-transition temps. ($176-211^\circ$) than other LC polyesters and had excellent thermal stability ($516-567^\circ\text{C}$). The fluorescence properties of the homopolymer of DPBP with 4,4'-OBBA, which was soluble in common organic solvents such as chloroform and THF, were also included in this study. For example, it had an absorption spectrum ($\lambda_{\text{max}} = 259$ and 292 nm), an excitation spectrum ($\lambda_{\text{ex}} = 258$ and 292 nm with monitoring at 350 nm), and an emission spectrum ($\lambda_{\text{em}} = 378$ nm with excitation at 330 nm) in chloroform.

RE.CNT 62 THERE ARE 62 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 3 OF 14 CAPLUS COPYRIGHT 2007 ACS on STN

AN 2001:94666 CAPLUS

DN 134:281337

TI Melting behavior of a wholly aromatic liquid crystalline random

copolyester
AU Bensaad, Salima; Noel, Claudine
CS Laboratoire de Physicochimie Structurale et Macromoleculaire, ESPCI,
Paris, 75231, Fr.
SO Macromolecular Chemistry and Physics (2001), 202(1), 36-50
CODEN: MCHPES; ISSN: 1022-1352
PB Wiley-VCH Verlag GmbH
DT Journal
LA English
AB DSC and wide-angle X-ray diffraction studies were carried out to
investigate nonisothermal and isothermal crystallization of a thermotropic
liquid

crystalline copolyester consisting of terephthalic acid (TA), p-hydroxybenzoic
acid (HBA), 4,4'-oxydibenzoic acid (OBBA) and methylhydroquinone (MH) with
mole ratios 19.2/23.1/19.2/38.5. Different crystallization processes are
observed

depending on crystallization conditions (cooling rate, crystallization
temperature, crystallization
time). Each of these processes is associated with a different m.p., heat of
transition and kinetics of crystallization. The equilibrium thermodyn.
properties of the

process III (nonisothermal expts. at a cooling rate below 5°C/min or
isothermal expts. in the temperature region above ca. 260°C) are found
to be $T_m = 352^\circ\text{C}$, $\Delta H = 10.4 \text{ kJ} \cdot \text{mol}^{-1}$, and
 $\Delta S = 17 \text{ J} \cdot \text{mol}^{-1} \cdot \text{K}^{-1}$. This process is associated
with (TA/OBBA-MH) sequences which contain the "swivel" OBBA units.

RE.CNT 43 THERE ARE 43 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 4 OF 14 CAPLUS COPYRIGHT 2007 ACS on STN
AN 1999:687796 CAPLUS
DN 132:3769

TI Orientation measurements from the surfaces of injection moulded plaques of
thermotropic liquid crystalline polymer using normal incidence
specular reflection

AU Bensaad, S.; Jasse, B.; Noel, C.
CS Laboratoire de Physicochimie Structurale et Macromoleculaire, ESPCI,
Paris, 75231, Fr.

SO Polymer (1999), 40(26), 7295-7301
CODEN: POLMAG; ISSN: 0032-3861

PB Elsevier Science Ltd.

DT Journal

LA English

AB The application of FTIR methods (attenuated total reflection, specular
reflectance and photoacoustic detection) to orientation measurements of
polymers, and to thermotropic liquid crystalline polymers (LCPs) in particular,
is described. FTIR specular reflectance dichroism studies are then
applied to determine mol. orientation from the surface of injection moldings
(square plaques with dimensions 60 + 60 + 2 mm, unfilled
polymer; 60 + 60 + 4 mm, filled polymer) of a LC copolyester
based on hydroxybenzoic acid, terephthalic acid, 4,4'-oxydibenzoic acid
and chlorohydroquinone. The effects of the melt temperature (265-315°C)
and of the addition of fillers (mica, silica or glass beads) on the
development of orientation are investigated. Scans are presented showing
the quality of orientation with respect to orthogonal axes. The
orientation profiles are related to the flow behavior of LCPs during
processing (spreading radial flow at the entrance to the mold, converging
flow in the first half of the mold and fountain flow). At some positions,
orientation min. occur which assume parabolic profiles and are associated
with an arc-like band-pattern consisting of dark and brownish white bands
at the surface of the mold. The light-colored arcs correspond to regions
in which the chains are not planar and tend to lie with their long axis in
the thickness direction.

RE.CNT 32 THERE ARE 32 CITED REFERENCES AVAILABLE FOR THIS RECORD

ALL CITATIONS AVAILABLE IN THE RE FORMAT

L9 ANSWER 5 OF 14 CAPLUS COPYRIGHT 2007 ACS on STN
 AN 1999:219822 CAPLUS
 DN 130:268122
 TI Liquid crystalline polyesters, their composition, and their uses
 IN Komatsu, Shinichi; Takagi, Akira; Nishimura, Suzushi; Suzuki, Shinichiro
 PA Nippon Oil Co., Ltd., Japan
 SO Eur. Pat. Appl., 54 pp.

CODEN: EPXXDW

DT Patent
 LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 905164	A2	19990331	EP 1998-307942	19980930
	EP 905164	A3	20001011		
	EP 905164	B1	20060503		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO				
	JP 11106493	A	19990420	JP 1997-265810	19970930
	JP 11124492	A	19990511	JP 1997-290848	19971023
	JP 11246652	A	19990914	JP 1998-46454	19980227
	JP 11246750	A	19990914	JP 1998-53132	19980305
	US 5989758	A	19991123	US 1998-163694	19980930
PRAI	JP 1997-265810	A	19970930		
	JP 1997-290848	A	19971023		
	JP 1998-46454	A	19980227		
	JP 1998-53132	A	19980305		

AB There are provided (a) liquid crystalline polyesters comprising 4'-hydroxy-4-stilbenecarboxylic acid type units, dicarboxylic acid units acting as a mesogen such as 4,4'-stilbenecarboxylic acid and catechol units as essential ingredients, and a liquid crystalline polyester composition comprising said polyesters and (b) optically active liquid crystalline polyesters consisting essentially of 4,4'-stilbenedicarboxylic acid type units and aliphatic diol units having asym. carbons. Films containing these 2 polyesters exhibit double-refractive indexes ≥ 0.3 at λ 590 nm. A typical (a) was manufactured by polymerization of 45 mmol 4'-acetoxy-3'-methoxy-4-stilbenecarboxylic acid with 6-acetoxy-2-naphthoic acid 15, catechol diacetate 31.5, and terephthalic acid 30 mmol at 240-270°, and a typical (b) was manufactured by polymerization of 77.8 mmol (S)-2-methyl-1,4-butanediol with 50 mmol di-Me 4,4'-stilbenedicarboxylate and 5.56 mmol di-Me 4,4'-biphenyldicarboxylate at 210° in the presence of tetrabutoxytitanium.

L9 ANSWER 6 OF 14 CAPLUS COPYRIGHT 2007 ACS on STN
 AN 1996:259835 CAPLUS
 DN 124:318050
 TI Crystalline and Liquid Crystalline Polyesters of Phenyl-Substituted 4,4'-Biphenols. 5. Copolymers with 4,4'-Oxybis(benzoic acid)
 AU Bhowmik, Pradip K.; Atkins, Edward D. T.; Lenz, Robert W.; Han, Haesook
 CS Department of Chemistry, University of Detroit Mercy, Detroit, MI, MICHIGAN, USA
 SO Macromolecules (1996), 29(11), 3778-86
 CODEN: MAMOBX; ISSN: 0024-9297
 PB American Chemical Society
 DT Journal
 LA English
 AB Wholly aromatic, thermotropic copolyesters, derived from either 3-phenyl-4,4'-biphenol (MPBP) or 3,3'-diphenyl-4,4'-biphenol (DPBP) with either terephthalic acid (TA) or 2,6-naphthalenedicarboxylic acid (NDA)

and 50 mol % 4,4'-oxybis(benzoic acid) (OBBA), were prepared by the melt polycondensation reaction, and their liquid crystalline properties were characterized by a number of exptl. techniques. The solubility of these polyesters in common organic solvents had also been studied. They had lower fusion temps., T_f , than the T_m values of the copolyesters of 4,4'-biphenol, TA, and 4-hydroxybenzoic acid. Their low T_f values were because of increased entropy of the resp. monomers. Each of them exhibited a nematic phase above its T_f value that contained both the threaded and schlieren texture. The two copolyesters of MPBP and hand-drawn fibers therefrom showed a banded texture that could be preserved for a prolong period of time. Each of them showed a nematic-to-isotropic transition as determined by the polarizing light microscope studies. The copolyesters of MPBP had a much broader range of mesophase than those of DPBP. The two copolyesters of DPBP exhibited a biphasic behavior at lower temps. than those of the copolyesters of MPBP. Their random microstructures were confirmed with the WAXD studies of oriented fibers and the ^{13}C -NMR spectroscopy, whenever possible. No development of crystallinity occurred in these copolyesters even on annealing. They had relatively high glass transition temps., T_g , in the range of 149-171 °C when compared with other liquid crystalline polyesters and good thermal stability, T_d , in the range of 413-436 °C. Since they had no detectable crystallinity, the copolyesters of either MPBP or DPBP with TA and OBBA were soluble in common organic solvents, but those with NDA and OBBA were not soluble in these solvents.

L9 ANSWER 7 OF 14 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1995:697204 CAPLUS

DN 123:84826

TI Binary blends of poly(ethylene terephthalate) with thermotropic liquid-crystalline copolyesters: thermal, morphological and mechanical studies

AU El-Amouri, Issam; Skoulios, Antoine; Quentin, Jean-Pierre

CS Inst. Charles Sadron, Strasbourg, 67083, Fr.

SO Macromolecular Chemistry and Physics (1995), 196(7), 2081-97
CODEN: MCHPES; ISSN: 1022-1352

PB Huethig & Wepf

DT Journal

LA English

AB Binary mixts., of a thermoplastic engineering poly(ethylene terephthalate) (I) with a thermotropic liquid-crystalline random copolyester (PCL) were prepared

by melt blending the polymers in a screw extruder or by precipitating them from a

solution in a common solvent. DSC and polarizing optical microscopy were used to study their thermal and morphol. properties as a function of temperature

and composition. At high temperature, the blends rich in I are isotropic liqs., those

rich in PCL are nematic fluids, and those of intermediate comps. are formed of two phases in equilibrium., one liquid-isotropic and one nematic. At low temperature, the blends are generally biphasic, with the two component polymers crystallized. The presence of crystallized PCL proved not to act as a nucleating agent towards the crystallization of I from the melt. A schematic phase diagram was drawn to summarize the thermal and morphol. behavior of the blends. SEM studies of injection molded samples revealed the presence of highly oriented fibrils when the composition exceeded roughly 50 weight-% in PCL. The bending elastic modulus of the injected blends with 75 weight% of PCL surpasses that of the pure PCL, probably due to the presence of oriented high-mol.-weight I mols. The particular dependence of the mech. rigidity upon the concentration of PCL permits easily to determine conditions for the thermoforming of I.

L9 ANSWER 8 OF 14 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1994:458248 CAPLUS
 DN 121:58248
 TI Crystalline polyamides with high melting point
 IN Sage, Jean Marc
 PA ELF Atochem S.A., Fr.
 SO Eur. Pat. Appl., 17 pp.
 CODEN: EPXXDW
 DT Patent
 LA French
 FAN.CNT-1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 574297	A1	19931215	EP 1993-401452	19930608
	EP 574297	B1	19990303		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, NL, PT, SE				
	FR 2692272	A1	19931217	FR 1992-7083	19920612
	FR 2692272	B1	19980320		
	AT 177125	T	19990315	AT 1993-401452	19930608
	ES 2129505	T3	19990616	ES 1993-401452	19930608
	CA 2098271	A1	19931213	CA 1993-2098271	19930611
	CA 2098271	C	19970819		
	JP 06234850	A	19940823	JP 1993-166043	19930611
	JP 2534220	B2	19960911		
	US 5362846	A	19941108	US 1993-75289	19930611
PRAI	FR 1992-7083	A	19920612		

AB The title polymers contain 1-99 mol% repeating units prepared from alkylenediamines and terephthalic acid (esters) and 1-99 mol% repeating units from alkylenediamines and 2,6-naphthalenedicarboxylic acid (esters). A typical copolymer was prepared by copolymerization of di-Me 2,6-naphthalenedicarboxylate, hexamethylenediamine, and terephthalic acid.

L9 ANSWER 9 OF 14 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1994:165105 CAPLUS

DN 120:165105

TI Fully aromatic liquid crystalline homopolyesters and copolyesters of 1,1'-binaphthyl-4,4'-diol

AU Bhowmik, Pradip K.; Lenz, Robert W.

CS Dep. Polym. Sci. Eng., Univ. Massachusetts, Amherst, MA, 01003, USA

SO Journal of Polymer Science, Part A: Polymer Chemistry (1994), 32(4), 651-9

CODEN: JPACEC; ISSN: 0887-624X

DT Journal

LA English

AB A series of fully aromatic, thermotropic polyesters based on 1,1'-binaphthyl-4,4'-diol, BND, was prepared by the melt polycondensation method and characterized for their thermotropic behavior by a variety of exptl. techniques. The BND copolyester with terephthalic acid formed a nematic melt at 353°C. In contrast, the copolyester from BND and 2,6-naphthalenedicarboxylic acid had a melting transition, T_m, above 400°C, so it was not possible with the equipment available to determine whether it formed a nematic melt. All of the terpolymers of BND formed nematic melts at much lower T_m values than those of its resp. homopolymers, as expected, because of the copolymerization effect of the added monomer. Moreover, all of the copolymers had higher glass transition temps., T_g, than those of other liquid crystalline polyesters and higher thermal stabilities.

L9 ANSWER 10 OF 14 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1991:187383 CAPLUS

DN 114:187383

TI All-aromatic liquid-crystalline polyesters of phenylhydroquinone with ether and ketone linkages

AU Shovby, Michael H. B.; Heilmann, Claus A.; Kops, Joergen

CS Inst. Kemitek., Tech. Univ. Denmark, Lyngby, DK-2800, Den.
SO ACS Symposium Series (1990), 435(Liq.-Cryst. Polym.), 46-61
CODEN: ACSMC8; ISSN: 0097-6156

DT Journal

LA English

AB Liquid-crystalline polyester fibers were prepared from terephthalic acid, phenylhydroquinone, and dicarboxydiphenyl ketone or dicarboxydiphenyl ether. Fibers containing ether linkages had higher thermal stability than fibers containing ketone linkages. The fibers had dynamic tensile moduli 30-50 GPa and break tenacities 400-600 mPa. Melt flow properties of the fibers were independent of the 3,4'- or 4,4'-linkages of the ketone or ether groups.

L9 ANSWER 11 OF 14 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1991:144814 CAPLUS

DN 114:144814

TI Flame-retardant liquid-crystalline polyester compositions for injection molding

IN Okamoto, Masaru; Ichikawa, Yasunori; Inoue, Toshihide; Yamanaka, Toru

PA Toray Industries, Inc., Japan

SO Eur. Pat. Appl., 28 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 398624	A2	19901122	EP 1990-305194	19900515
	EP 398624	A3	19911121		
	EP 398624	B1	19970326		
	R: DE, FR, GB				
	JP 03103462	A	19910430	JP 1989-217807	19890824
	JP 2505590	B2	19960612		
	JP 03182547	A	19910808	JP 1989-323380	19891212
	JP 2551175	B2	19961106		
	JP 04136027	A	19920511	JP 1990-856	19900105
	JP 2581242	B2	19970212		
	US 5085807	A	19920204	US 1990-523030	19900514
	KR 171195	B1	19990320	KR 1990-6896	19900515
PRAI	JP 1989-122050	A	19890515		
	JP 1989-323380	A	19891212		
	JP 1990-856	A	19900105		

AB The title compns., giving moldings having good heat resistance, mech. properties, and appearance, contain liquid-crystalline polyester containing the units

O-p-C6H4CO and OR10 77-95%, OCH2CH2O.5-23%, and COR2CO equivalent to diols [R1 = C6H4C6H4, C6H4, O(C6H4)2, C10H6, Me2C(C6H4)2, or substituted derivs.; R2 = C6H4, C6H4C6H4, C10H6, O(C6H4)2, 3-X-1,4-C6H4O(CH2)2O-1,4-C6H4-3-X (X = H, Cl)], and 0.5-30 phr polymeric flame retardant. A blend of 100 parts liquid crystalline polyester (from p-hydroxybenzoic acid 7.2, 4,4'-biphenyldiol 0.675, terephthalic acid 0.675, and PET 1.125 mol) and 6 parts brominated polystyrene (Pyrochek 68PB) (I) had heat distortion temperature 232°, flexural strength 1330 kg/cm², and UL-94 flammability rating V-0; vs. 258, 1890, and V-2, resp., with 45 parts glass fibers in place of I.

L9 ANSWER 12 OF 14 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1989:115940 CAPLUS

DN 110:115940

TI Liquid-crystalline aromatic polyesters

IN Imanishi, Taichi

PA Asahi Chemical Industry Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 63182332	A	19880727	JP 1987-13976	19870126
PRAI	JP 1987-13976		19870126		

AB The title polyesters, exhibiting melt anisotropy and having good mech. properties, comprise repeating units $[OZ[(O)aZ]bO]c$, $[COZ1(O)aZ1CO]d$, and $(COZ1CO)e$ [$Z = p-C6H4$, $Cl-$ or Me -substituted $p-C6H4$; $Z1 = p-C6H4$; $a, b = 0-1$; $d/(d+e) = 0.1-0.7$; $c = d+e$]. Thus, p,p' -biphenyl diacetate 62.1, p,p' -dicarboxydiphenyl ether 26.4, and terephthalic acid 21.6 g were polymerized at 250-340° to give a pale yellow polyester (softening temperature 325°) which was spun and wound to give a 5-denier fiber having tensile strength 4.8 g/denier and elongation 3.5%, vs. 18.6 and 5.2, resp., after 120 min at 280°.

L9 ANSWER 13 OF 14 CAPLUS COPYRIGHT 2007 ACS on STN

AN 1984:456435 CAPLUS

DN 101:56435

TI Liquid crystalline polymer compositions, process, and products

IN Wolfe, James Frederick; Sybert, Paul Dean

PA SRI International; USA

SO PCT Int. Appl., 612 pp.

CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 8401160	A1	19840329	WO 1982-US1285	19820917
	W: DE, GB, JP, NL, SE, US				
	RW: BE, FR				
	EP 119192	A1	19840926	EP 1982-903026	19820917
	R: BE, FR				
	US 4533692	A	19850806	US 1982-433831	19820917
	EP 119271	A1	19840926	EP 1983-903627	19830915
	EP 119271	B1	19900711		
	R: BE, FR				
	DE 3390220	T0	19841213	DE 1983-3390220	19830915
	DE 3390220	C2	19950420		
	JP 60500538	T	19850418	JP 1983-503773	19830915
	JP 2573820	B2	19970122		
	US 5260365	A	19931109	US 1985-733424	19850513
	JP 06316633	A	19941115	JP 1994-23499	19940126
	JP 2940380	B2	19990825		
	JP 06316634	A	19941115	JP 1994-23500	19940126
	JP 2940381	B2	19990825		
	JP 06316635	A	19941115	JP 1994-23501	19940126
	JP 2940382	B2	19990825		
	JP 06316636	A	19941115	JP 1994-23503	19940126
	JP 2979283	B2	19991115		
	JP 06316637	A	19941115	JP 1994-23504	19940126
	JP 2940383	B2	19990825		
	JP 06340741	A	19941213	JP 1994-23498	19940126
	JP 06341015	A	19941213	JP 1994-23502	19940126
	JP 07030482	B	19950405		
PRAI	US 1982-433831	A2	19820917		
	WO 1982-US1285	A	19820917		
	US 1983-616469	A1	19830915		
	WO 1983-US1437	W	19830915		

AB Comps. comprising high concns. of extended chain polymers prepared in polyphosphoric acid (I) capable of having good cohesive strength for spinning of fibers through long air gap distances at high spin draw ratios are provided. Thus, 386.78 g 2,5-diamino-1,4-benzenedithiol

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<http://www.cas.org/support/stngen/stndoc/properties.html>

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L12 STRUCTURE UPLOADED

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FILE 'REGISTRY' ENTERED AT 18:27:58 ON 14 JUN 2007

L1 0 S "PARA-HYDROXYBENZOIC ACID ANHYDRIDE"/CN
L2 STRUCTURE UPLOADED
L3 32 S L2
L4 581 S L2 FULL

FILE 'CAPLUS' ENTERED AT 18:34:15 ON 14 JUN 2007

L5 442 S L4/PREP
L6 0 S L5 AND TRANSITION TEMPERATTURE
L7 47 S L5 AND TRANSITION TEMPERATURE
L8 745 S L4
L9 14 S L8 AND CRYSTALLINE
L10 0 S L8 AND PRECIPITATION
L11 1 S L8 AND ISOLATION

FILE 'REGISTRY' ENTERED AT 18:49:08 ON 14 JUN 2007

L12 STRUCTURE UPLOADED

=> d l1

L1 HAS NO ANSWERS

L1 0 SEA FILE=REGISTRY "PARA-HYDROXYBENZOIC ACID ANHYDRIDE"/CN

=> d l12

L12 HAS NO ANSWERS

L12 STR

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This file contains CAS Registry Numbers for easy and accurate substance identification.

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SEARCH TIME: 00.00.02

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